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Occupational Education. A Position Statement

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An overview of occupational education was developed to secure answers to the following questions: (1) What is the nature of employment or employability, (2) What is involved in the world of work, (3) What is the nature of a career, and (4) What is formal education's contribution to these? In an attempt to classify and project the needs and demands of different types of employment, graphs were used to illustrate: (1) employment in major occupational groups, (2) employment in major industry groups, (3) employment by occupational families, (4) occupational opportunity trends, and (5) differential unemployment rates. The primary outcome of work is some specified product, but learning is also a concomitant of every job. A goal of occupational education is the gaining of specific skills or knowledge contributing to the efficient performance of some job which results in a product and learning. Each job requires specific combinations of skill, knowledge and experience for the sake of efficiency, but even more basic to employability are certain attitudes. A taxonomy of work was forwarded to illustrate the three basic problems to be confronted in occupational education: unemployment, underemployment, and overemployment. Objectives of the Rocky Mountain Educational Laboratory were specified. (EM)

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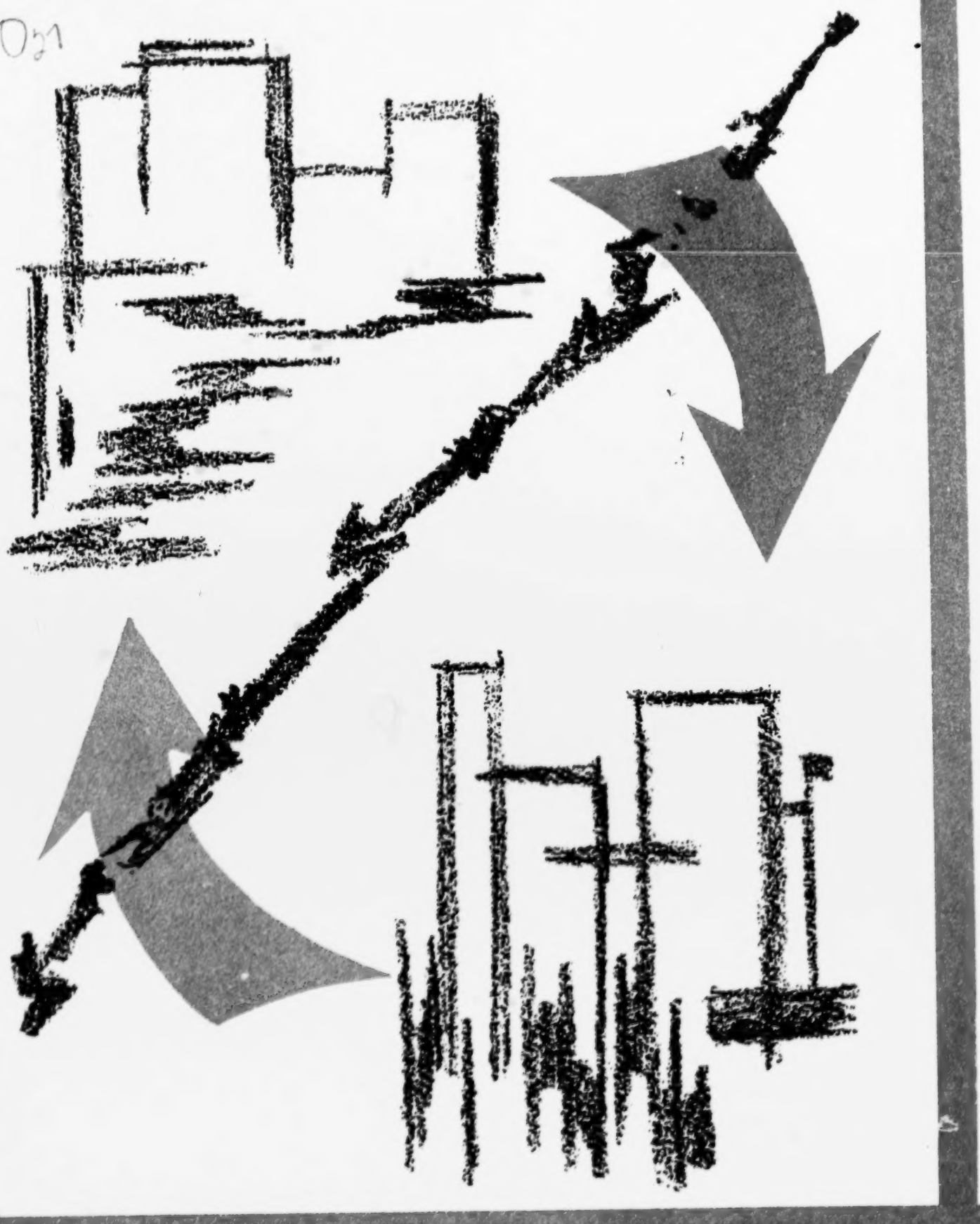

BETWEEN EDUCATION AND THE WORLD OF WORK

ROCKY MOUNTAIN EDUCATIONAL LABORATORY

VT008459

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

OCCUPATIONAL EDUCATION

A Position Statement

"Building a society in which all people can function with optimum mutual satisfaction."

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OCCUPATIONAL EDUCATION

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The Problem

Probably no area of education has received more widespread attention within the past decade than has occupational education. The introduction of technology into so many jobs that had remained for years basically unchanged found many workers ill-prepared and threatened in terms of their future employment. Many new jobs were created which required new skills and competence.[1] These changes in the labor needs consequently raise a question concerning who or what agencies will provide the necessary basic and additional training or education. This is a particularly critical question in regard to the youth looking ahead to a first job and a satisfying lifetime career.

In order to meet the demands of technological progress and manpower change, some major industries and businesses have established within their regular organizations provision for the re-education and up-grading of personnel. However, small businesses and minor industries, especially the service occupations, cannot usually afford such programs. It is logical that society should turn to the educational establishments—the secondary schools, colleges and universities—for help with this training and education. To date this has not been a solution. The school systems' commitment to an academic education apparently precludes the feasibility of a practical occupational approach to education.[2]

Two major reasons are indicated for the resistance to educational change by the education establishment: (1) The social status habitually associated with an academic education and college degrees, and (2) the subsequent inherent bias of many teachers, elementary through university.[3] This bias reflects the attitude that success is achieved by the acquisition of academic content which is not occupationally relevant. The two complementary factors, the first functioning in the home and community and the second in the classroom, tend to stigmatize both individuals and programs having goals related to the "world of work," with the exception of those occupations classified as "the professions."

The problem of achieving maximum employment has been recognized by local, state and national political and educational agencies, business, industry and organized labor. They have not only made recommendations, but have provided some funds for action programs. For the most part, the recommendations and initiated changes have had little success.[4] More than fifty years ago many communities planned and built technical high schools, but after a few years their programs became similar to those of the general high schools. The Educational Policies Commission recommended "Economic Efficiency" as one of the primary

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1 Kenneth E. Boulding, "Expecting the Unexpected: The Uncertain Knowledge and Technology," *Prospective Changes in Society by 1980: Designing Education for the Future, An Eight-State Project.* Denver, Colorado, July 1966. pp. 199-215.

2 *Ibid.* p. 212.

3 "The Role of the Secondary School in Preparation of Youth for Employment," *Institute for Research in Human Resources.* Penn State, February 19, 1967. Summary. p. 7.

4 Rodrick F. McPhee, "Planning and Effecting Needed Changes in Local School Systems," Eight state project, *Planning and Effecting Needed Changes in Education.* p. 196.

curriculum goals of a high school, yet the majority of students continued to pursue a totally academic program. Track systems have been initiated in many schools with little effect on the number of students capable of entering the labor market.

Area specialized trade and vocational schools have been established apart from the traditional school systems. These have served a small group of students, but have made no impact on the vast numbers of people with marginal saleable skills. In recent years projects such as those sponsored by the Office of Economic Opportunity have attempted to provide training. At best these have had mixed degrees of success and only with a limited number of people. The most success probably has been achieved by business and industry through in-service or company sponsored training.[5] This has been an answer to the up-grading of people already employed in the larger organizations, but it does not help the young or those employed by small establishments. Thus there appears to be a very large gap yet to be bridged if all the American people are to be employed at their optimum potential. This point was further emphasized in a recent report, "Vocational Education Gets a Failing Grade," from the twelve-member council headed by Martin W. Essex, Ohio State Superintendent of Public Instruction.[6] Following an extensive study of the 1963 Vocational Education Act, the council reported to Congress that vocational education is still concentrated on training in such traditional fields as farming and home economics. The real need is for training in technical urban skills. The council went on to say that it found little evidence that vocational education has been broadened to serve all people in the community as the 1963 law intended. Even though it is recognized that the expenditures and programs supported in the past have not been totally effective, it is interesting to note that the recommendations made for the future are, in essence, an extension of these same types of programs. More money, re-organization of existing departments, more emphasis on the inner city problems and incentives to the states to improve their performances are needed. Perhaps these questions should be asked: "What is the nature of employment or employability?", "What is involved in the world of work?", "What is the nature of a career?", and most importantly, "What is formal education's contribution to these?".

Occupational Education Literature Reviewed

In the short time that the Rocky Mountain Educational Laboratory, Inc., has been involved in exploring the broadly defined topic of occupational education, it has been found that much has been written and many people have directed their attention toward the problem of providing adequate employment. Much time has been spent by various interested groups in attempting to classify different types of employment and employers. Also much time has been spent in projecting the needs and demands of the various categories of jobs and workers. Typical studies and projections are illustrated by the following graphs.

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5 "The Role of the Secondary School in Preparation of Youth for Employment," *op.cit.* p. 7.

6 "Vocational Education Gets a Failing Grade," *Education U.S.A.*, Washington, D.C., February 12, 1968, p. 127.

Employment in Major Occupational Groups

Graph I shows the number of workers in each of the various classifications. The findings are typical of the occupational groups. The graph indicates that there are greater employment opportunities in certain classifications than in others.

Graph I

EMPLOYMENT IN MAJOR OCCUPATIONAL GROUPS[7]

(millions of workers)

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7 "A Look at Tomorrow's Jobs," *Occupational Outlook Report Series*, Bulletin No. 1450-A, U. S. Dept. of Labor, Bureau of Labor Statistics, 1966. p. 1.

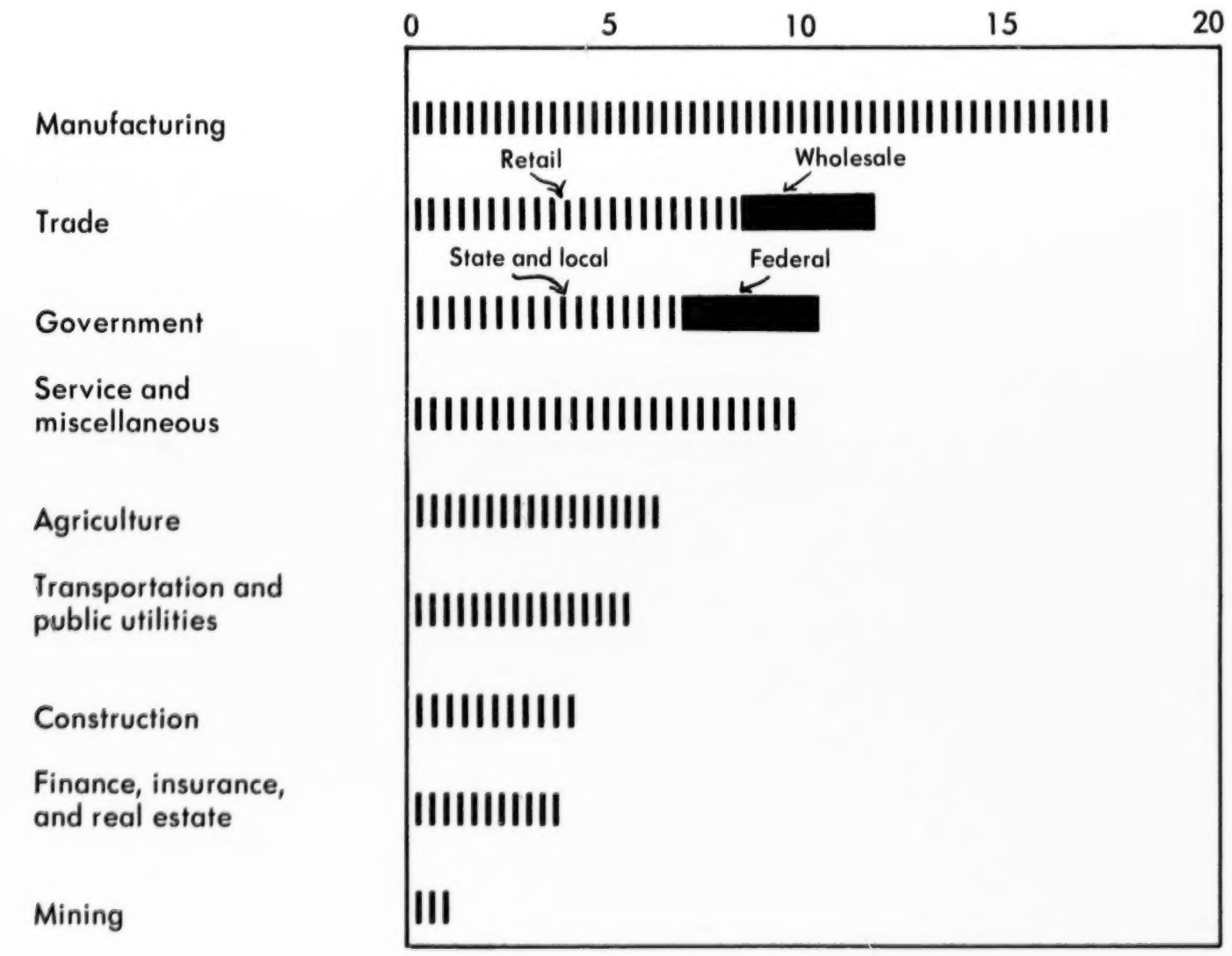
Employment in Major Industry Groups

Graph II illustrates and classifies employment from business and industry's point of view in broad categories. In terms of employment these classifications probably have little significance because they do not pin-point the skills, knowledge, specific competence, and the attitudes prerequisite to employability.

Graph II

EMPLOYMENT IN MAJOR INDUSTRY GROUPS, 1964 . . . . . .

(millions of workers)[8] *



* Wage and salary workers except agriculture

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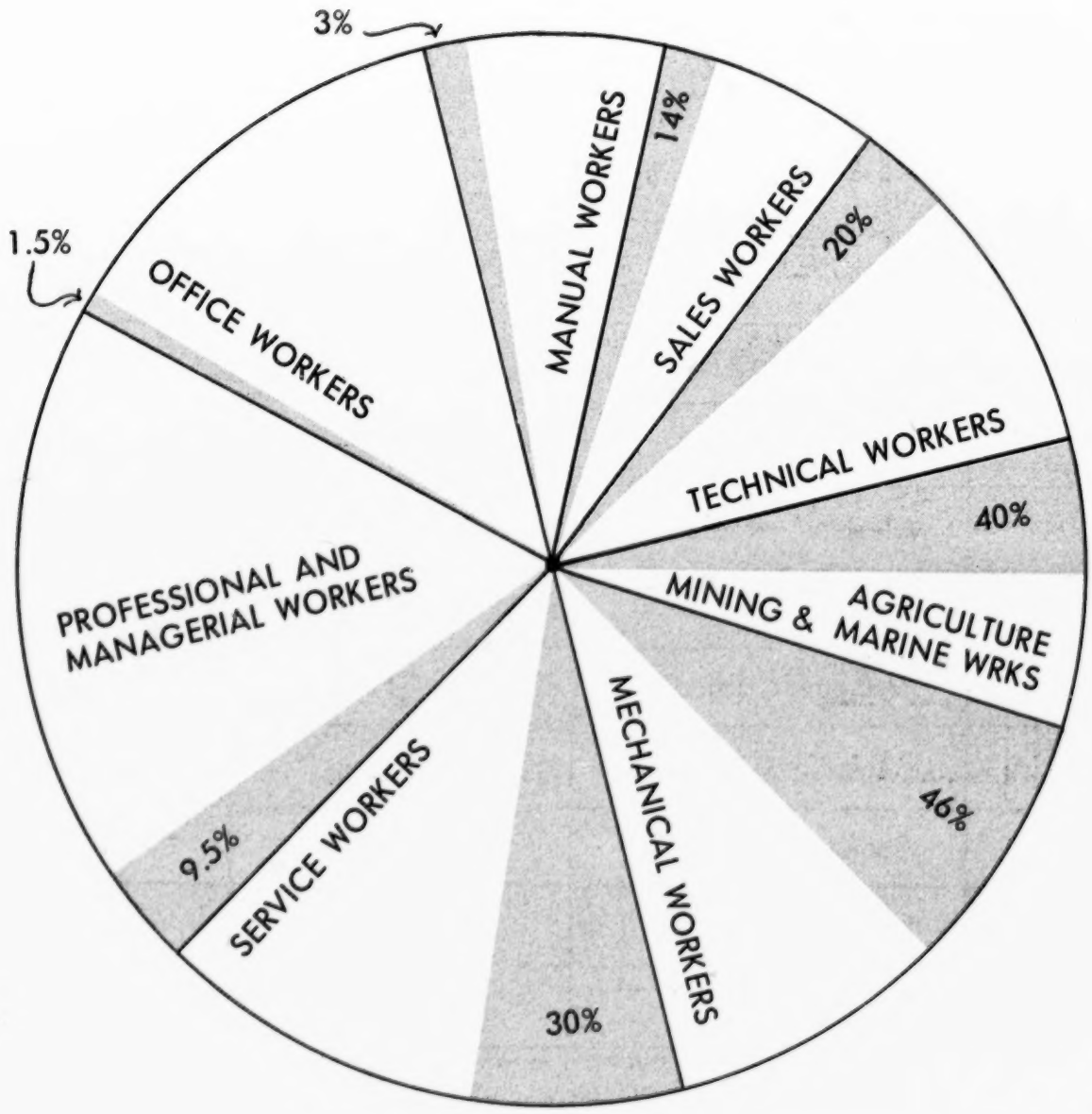
[8] *Ibid.* p. 2.

Employment by Occupational Families

Graph III indicates the proportionate distribution of employed persons according to occupational families and provides a visual impression of the numbers of workers employed in each of the various categories. The shaded areas indicate the percentage of the labor force in each with membership in organized labor.

Graph III

OCCUPATIONAL FAMILIES



Occupational Changes Forecast

Labor needs by 1980 are projected in Graph IV. A greater demand for some specialized technical types of workers and a possible decline in the number of workers in other categories is anticipated. Some of the new occupations concerned with technology and technological advances have a very high percentage gain, while those of the unskilled and semi-skilled are even declining in terms of the number employed. The one factor not pointed out in a graph of this kind is that relatively few are now employed in some of the highly technical areas and rather large numbers are employed in some of the other categories, such as salesmen, clerks, truck drivers, mechanics and repairmen. This omission tends to misrepresent the true manpower needs of the next decade.

Graph IV

JOB OPPORTUNITY TRENDS

Decline	Major Occupational Group	Projected employment growth			
		No change	Less than average	Average	More than average
	Professional, Tech.				
	Service workers				
	Clerical workers				
	Skilled workers				
	Managers, prop.				
	Sales workers				
	Semiskilled				
	Laborers (nonfarm)				
	Farm workers				

Job opportunities generally will increase fastest in occupations requiring the most education and training . . . . [9]

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9 "A Look at Tomorrow's Jobs," *op.cit.* p. 7.

Highest Unemployment Rates

Graph V suggests that the population with only an elementary school education would be virtually unemployable for life. This is not necessarily the case. The unshaded bar indicates the number of unemployed 18- to 24-year-olds with a high school education. However, the younger group, by virtue of age alone, would include a higher ratio of unemployed. If we look at the shaded bar indicating the 25- to 54-year-old age levels, it is not clear that any significantly higher proportion of those with a minimal education are unemployed than those with a considerable amount of education. When comparing those with more education, four years of high school, some college or even a college degree, with those with fewer years of formal schooling, there is no startling difference. There is an appreciable percentage of unemployed in all groups. Furthermore, it can be noted that there is among the older population a considerable number with some college and with college degrees who continue to be listed as unemployed. Those in the 18- to 24-year-old bracket with a degree or some college rank rather high as being unemployed—perhaps as high as those of the same age without college. Are there factors other than formal education or saleable skills which contribute significantly to the problem of unemployment? What is the real relevance of school to employability?

Graph V

UNEMPLOYMENT RATES ARE HIGHEST FOR YOUNG WORKERS AND FOR THOSE WITH THE LEAST SCHOOLING[10]

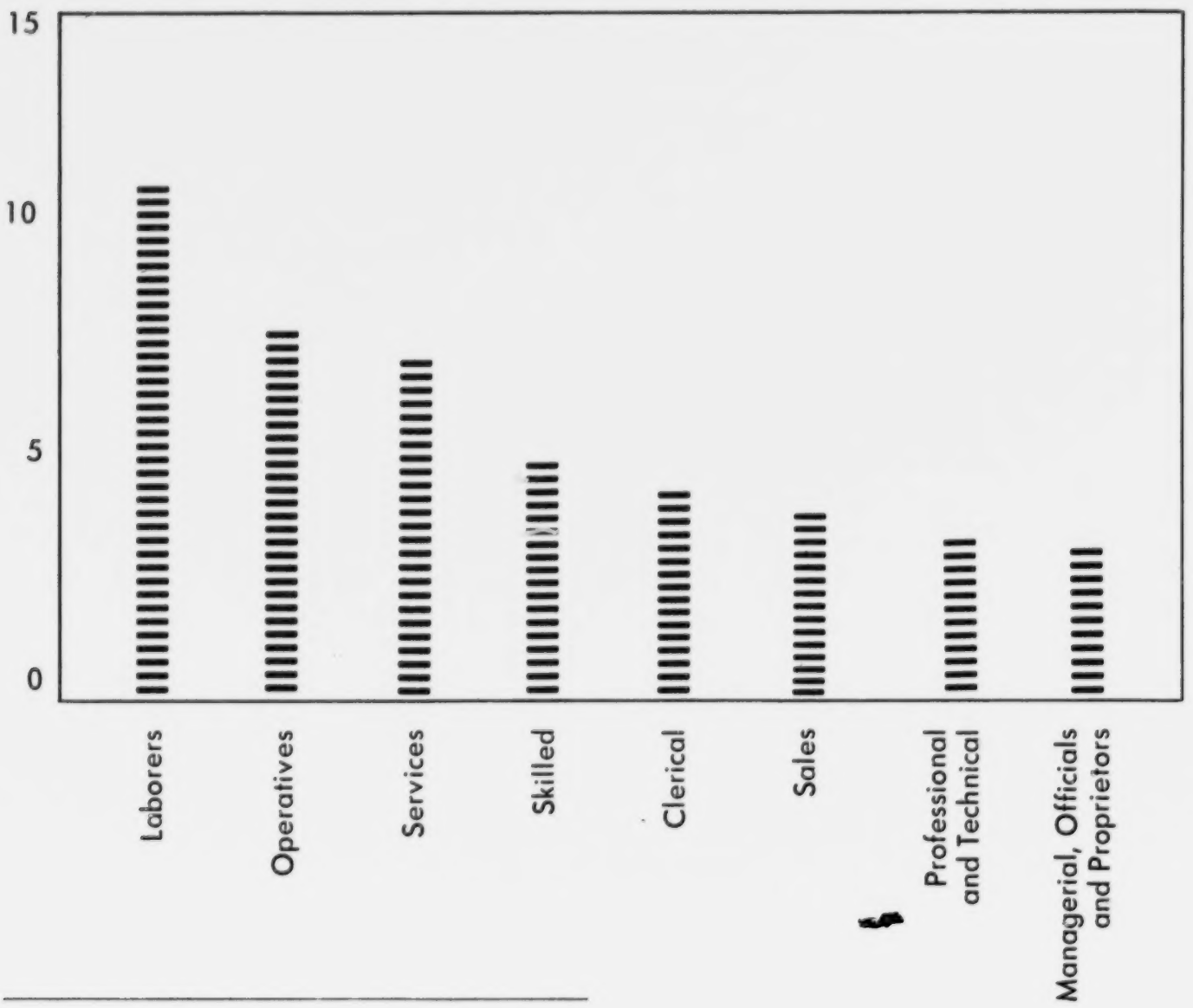
10 *Ibid.* p. 9.

Unemployment Hits Hardest at the Least Skilled

Graph VI appears to support the previous position that employment is related to the amount of education. However, further examination indicates that a high degree of unemployment also exists among those people with some skills or those with considerable higher education. In fact, more people with some kind of saleable skills are unemployed than those classified as laborers. What then causes people to be unemployed? Are there significant factors other than job entry skills which are needed if our total population is to be fully employed? To continue support for vocational education with a goal of providing job entry skills is apparently not a complete answer.

Graph VI

UNEMPLOYMENT HITS HARDEST AMONG THOSE IN THE LEAST SKILLED JOBS[11]



11 *Ibid.* p. 10.

The Parts of the Problem

In physics, work is measured in terms of the expenditure of energy and time (E·T). Therefore, when we think of man as working we also think of him as expending energy (physical or mental) for some period of time. Usually, the specific use and application of energy is described as a job and includes some terminal product. Since products are often complex and require extended periods of time and perhaps the cooperation of several people, jobs can be broken down into sub-jobs or tasks. For example, the job of preparing breakfast calls for performance of several specific tasks, such as frying an egg, toasting a slice of bread, cooking bacon, setting the table and numerous other possibilities. As we further analyze a job in terms of how we use energy and time it appears that as a discrete act there are other dimensions of content, the prescriptive and the discretionary.

> According to Brown and Jaques, the prescribed content of a job consists of those elements about which the worker has no authorized choice. The prescribed elements are of two kinds: (1) the results expected, and (2) the limits set on the means by which the work can be done. The results of a job are nearly always prescribed in the sense that the object of a person's work is set by the manager and/or supervisor and not by himself. As far as methods of work are concerned, some are prescribed and some are discretionary. The prescribed methods are determined by the equipment available, the physical limits of the job situation, the routines, the general policies governing the methods to be used in pursuing results.
>
> The discretionary content of work consists of all those elements in which choice of how to do a job is left to the person doing it. Here a worker is authorized and expected to use discretion and judgment as he proceeds with his work, overcoming obstacles by picking what he considers the best of the alternative courses available at each state, and pursuing the course he has chosen.[12]

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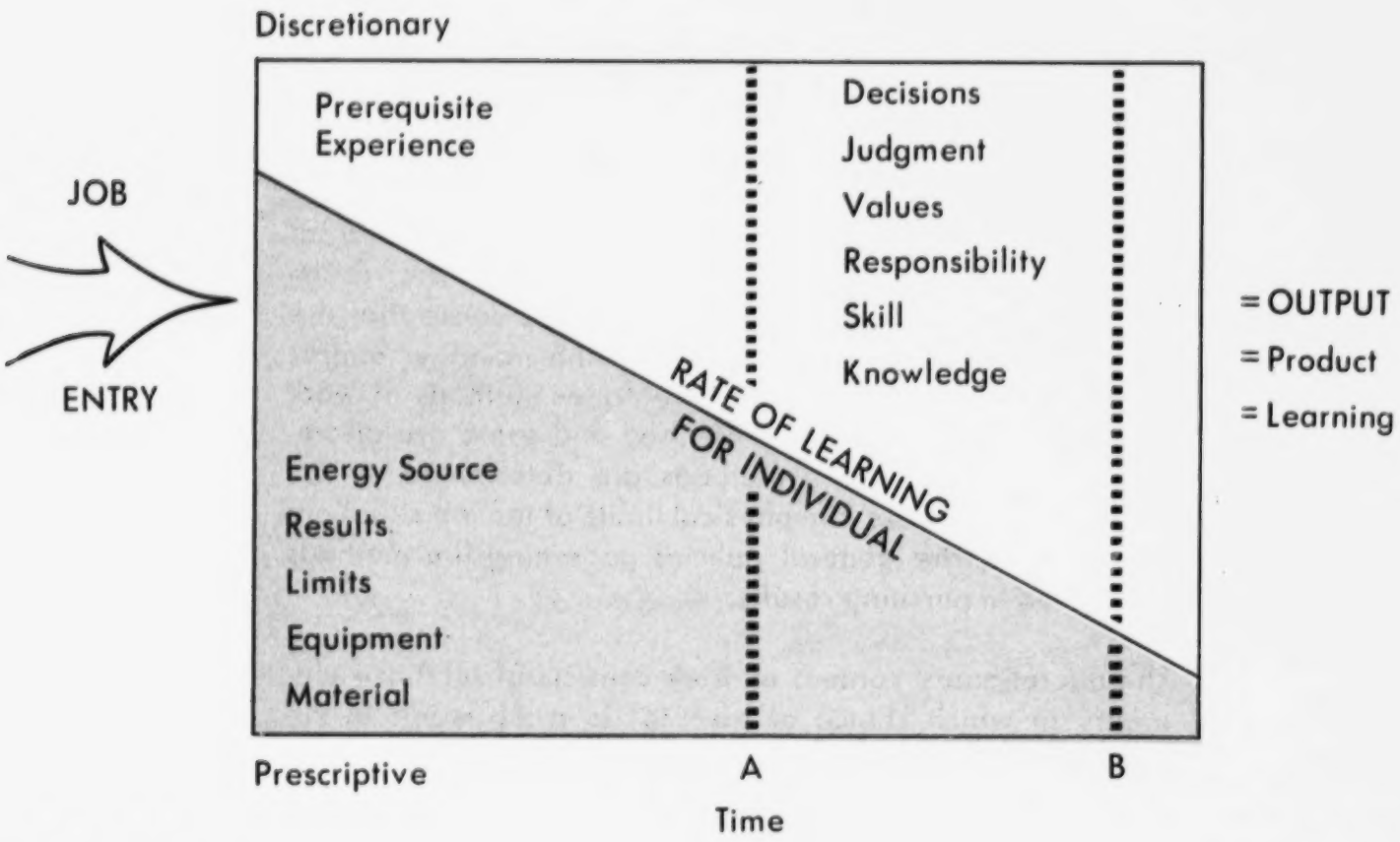
12 Sidney A. Fine, *Guidelines for the Design of New Careers*, Washington, D.C.: The W. E. Upjohn Institute, 1967.

The job entry point is the instant a person starts a job. At that point the greater percentage of the time and energy of the worker is prescribed. The first time a person does a job each act is a new experience. The second time he performs it he has learned something from past experience and, consequently, is more efficient and takes less direction or prescription. Model I illustrates these dimensions of a job. Time is represented along the base, and the ratio of prescriptive and discretionary action is represented on the vertical axes.

Model I

EMPLOYER – WORK

(Product Objective)



Using the job of preparing breakfast as an example, assuming that the wife had never prepared breakfast before, at the job entry point or the first morning it is clear that almost every action of each task would need to be prescribed. On the second morning, as a result of learning from the first experience, the wife would proceed with slightly less prescribed and slightly more discretionary action. As the process (learning) continues morning after morning the wife progresses to the point after several months or years when getting breakfast consists almost entirely of discretionary acts with very few prescriptive.

We can generalize, therefore, that as the worker repeats the same task several times he learns in the process, thus reducing his actions to habit, routine, skill or knowledge. The dotted line on Model I labeled A would indicate that the worker on a specific job at this time on the continuum has reduced the tasks through learning to about 50% prescriptive or direction and about 50% discretionary or personal decision. As we move along to Point B the job has become very routine and, as far as the worker is concerned, this particular task or job is learned. At this point we might say that this person has developed competence, skill, or knowledge with respect to this job.

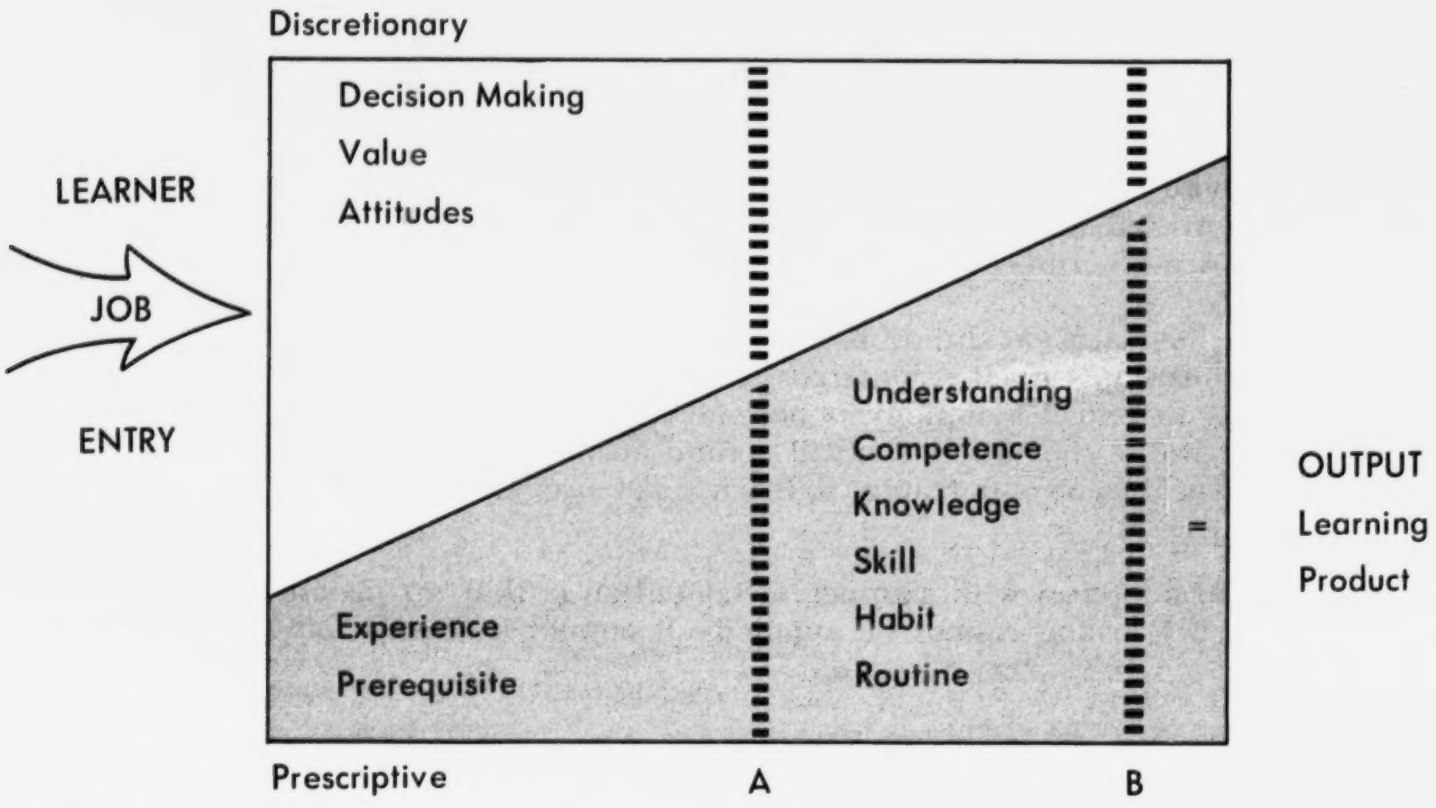
The diagonal line running from the upper left corner of the rectangle to the lower right corner separating the prescriptive action from the discretionary action indicates the progress of the act of learning. The angle of this line is an indication of this individual's rate of learning on this job. Again, we can generalize that on every job there are prescriptive and discretionary dimensions bonded together by learning. Work then has two dimensions, prescriptive and discretionary, as illustrated in this model, and two products, learning and the primary purpose of the work.

Model I illustrates a job as viewed by an employer. Model II, which is similar, illustrates a job as viewed by an employee or, if the job has an educational objective, as viewed by a student.

Model II

EMPLOYEE — WORK

(Learning Objective)



The same dimensions, the prescriptive and discretionary, exist as previously, except that at the very beginning of the job the employee has very little developed skill or routine, and each movement or step toward the completion of the job is a highly discretionary matter. In other words, each movement or expenditure of energy is involved in an act of learning and decision making. At the point in time labeled A, the worker has advanced by the process of learning to function with about equal amounts of prescriptive (habit, skill, or routine) and discretionary (decision, value, or judgment) acts. At Point B very little time and energy is used on discretionary matters. The worker performs in a routine way as a result of acquired skill and knowledge. This illustrates the process of learning as a job is repeated over a period of time. The diagonal line through the rectangle indicates the presence and rate of learning for an individual. It could be pointed out that the rate of learning will be individualistic, determined by a number of personal factors, such as ability, skill, motivation, strength, stamina and previous experience.

As demonstrated by these models a job includes prescriptive and discretionary dimensions. The primary outcome of work on a job is some specified product, but learning is also a concomitant of every job. In this sense, work is an educational process producing knowledge and or skill. The goal of occupational education is the gaining of specific skills or knowledge contributing to the efficient performance of some job which results in a product and learning.

Significance of Learning

At this point we must make several assumptions with respect to learning.

First, man must learn in order to live. To learn is a basic human requirement or drive. It is difficult to imagine a human having any experience or performing any kind of work without learning. A study of anthropology reveals that the human race would not have advanced to the present intellectual or skill level if the drive to learn were not present. Sometimes this drive to learn is described as curiosity, ambition, aspiration, or a part of motivation.

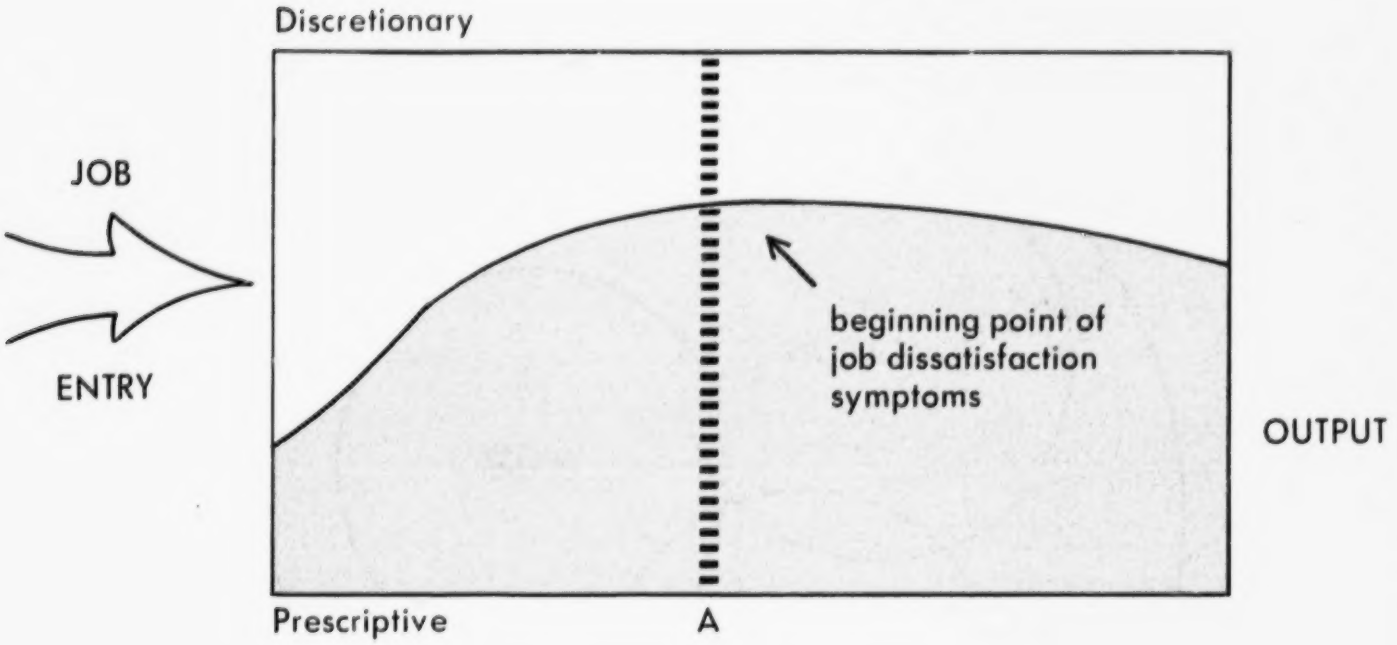
There is evidence that man must continue to learn on a regular basis or he becomes frustrated and bored with life. The symptoms of low job satisfaction, for example, are described by routine, boredom and lack of challenge.

Model III illustrates a situation where a worker continues at a job after the learning potential has been exhausted. When Point A is reached the worker behavior begins to reflect symptoms of boredom and routine or low job satisfaction. It seems inevitable that every job will in time become routine and boring for the average worker if some opportunity to learn is not provided.

A second assumption with respect to education is that *all people can and do learn.* In fact, learning cannot be avoided—it cannot be turned off—it is a lifetime process.

Model III

LEARNING – LOW JOB SATISFACTION



A third assumption is that the justification for a formal system of education is based on the *efficiency of learning specified goals.* Another way of stating this assumption is that effective instruction shortens learning time.

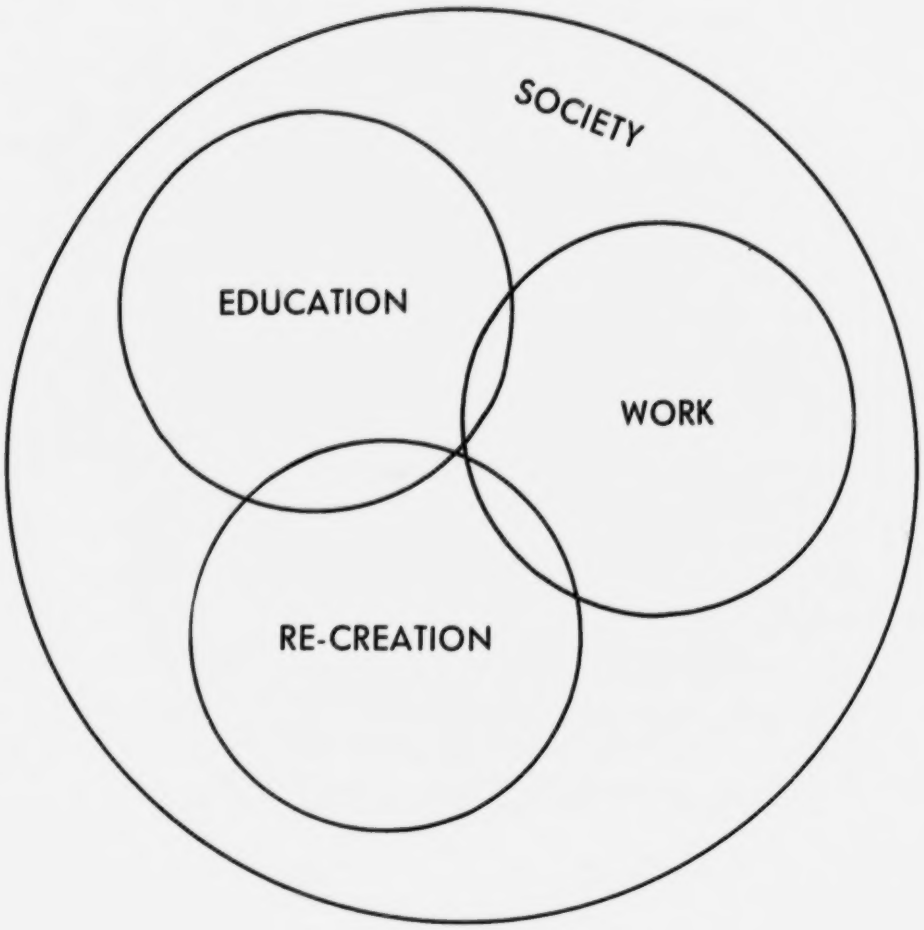
A final assumption is that all formal education has an occupational end. Occupation in this context means simply to occupy or take up time and space. A person then will, without choice, occupy some station as long as he is living. If we can accept occupation as referring to *how* and *where* we take up our time and space in life, then our concern becomes related to the *qualities* of life, rather than the mute question of occupancy. Quality of life in our society is in some way related to the contribution we make to the world, usually in terms of some product. The product of life is discussed later.

Occupation consists of three functions: using energy and time (work), replenishing the energy reserve (re-creation), and improving the efficiency of the system (human organism) to function (education). Diagram I illustrates how these three functions interrelate. The circle circumscribing the three small circles suggests the community or environment, social and physical, in which we live and has no bounds other than the limits set by the individual's personal aspirations. Included in the community are the energy resources of life and product. The individual in this sense is an energy system with capacities to transform energy from one form to another; that is, he transforms food and air by the process of work into a product.

Man's basic advantage over all other life forms is his ability to adapt, to learn and create. Through this process he has been able to invent and use outside energy systems to supplement and complement his own system. The capacity of man to learn facilitates the continual expansion of energy systems, each with a higher ratio of work output for the human energy invested. Our proliferation of technical-mechanical inventions illustrates these energy systems.

Diagram I

OCCUPATION



Occupation is the interaction of work-education and re-creation in the community or social setting throughout lifetime. In this respect the concern of occupational education is the quality of occupation.

With the invention of new energy systems comes the demand for more and higher levels of learning. As stated earlier the educational system is justified in terms of efficiently providing specific learning. As suggested in the work-learning model, learning is either a product or by-product of all work and is significant to the quality of occupation. Depending on the relevance of the educational goals to occupational goals, all learning does contribute to occupation—all education has an occupational end.

School is work. An educational program with its learning tasks has the same content as any other job. Where normally we think of a job as having a product, the primary product of education is the acquisition of specific skills or knowledge. The energy input is directed toward learning specifics as contrasted with a typical job where the primary output is a product and education is a concomitant. In education the primary objective of work is learning specifics.

The Product of Work

The product of work is man's only contribution in this world. As we look around this world, all we see that can be attributed to man's existence are the products of work, the things that resulted from his expenditure of human energy (physical, mental) and include such products as technical machines, literature, painting, poetry, music or his influence upon other humans and upon nature in general. All of man's accomplishments are a product.

Employability

Being employable requires more than knowledge or skill. But what are the common denominators of employability? On what basis does an individual sell his human competence? For our purposes it seems desirable to consider work in terms of small parts. A task is a small part of work. A job is usually a number of related tasks which result in a completion of some product or service.

One reward for work may be compensation. When a person's energy and time are exchanged for pay, the process is usually understood to be employment. While occupation may include innumerable jobs, employment usually implies a contractual arrangement between an employee and an employer where the employee sells his time and energy to an employer who utilizes the work to produce something that society needs.

If the goal of occupational education is to achieve optimum mutual satisfaction by the employee and employer, an identification of the components that lead to this satisfaction must be made. Certain questions arise. What are the quantities and qualities necessary for mutual satisfaction between the employee and the employer? Which quantities and qualities are common to all jobs? The employer, for example, is interested in output or production, and each job requires specific skills (mental and/or physical) which provide efficiency and quality. The employee is interested in meeting his specific physiological, social, and psychological needs. If the needs are met, he is satisfied in his job.

$$\text{WORK} = \text{ENERGY} \cdot \text{TIME} = \text{JOB}$$
$$= \text{JOB} = \text{TASK}_1 + T_2 + T_3 \ldots . T_n$$
$$= (\text{Attitude}) \cdot (\text{Job}) = \text{Output}$$
$$= \text{Product} + \text{Learning}$$

Each task requires uniquely different skills and knowledges, and attitudes must be a part of the work formula if there is to be an output of product and learning. The examples of attitudes most common to employability would include a desire to work, responsibility, dependability, loyalty, life aspiration, appreciation for quality, value of cooperation, personal satisfactions, dignity of work well done, pride in accomplishment and adaptability.

It is inconceivable that a person would be employable if there was not a desire on his part to sell his energy or work. It is difficult to conceive of an employer paying a person who was not responsible or did not demonstrate a certain amount of dependability. A person thus could be unemployed simply because he did not want to work; an employer might not be willing to hire a person for pay who was not responsible or dependable, regardless of his skill or knowledge. These represent attitudes which would seem to be very basic to any consideration of employability. Others such as mutual loyalty would seem to be important in terms of promotion of employee and product. A sense of cooperation contributes immeasurably to the quality and quantity of a product. The partnership between employee and employer must yield mutual satisfactions if efficient production is to result. The factors of personal satisfaction include pride, dignity, worth, status, and appreciation and help to give stability to any working relationship.

In summary, each job requires specific combinations of skill, knowledge and experience for the sake of efficiency, but even more basic to employability are certain attitudes. Consequently, a primary concern of occupational education is the fostering of these attitudes.

The Answer
A CAREER

A career is a term sometimes used to indicate the type of job or the line of work a person pursues. It might be more meaningful to define a career as simply a lifetime of work and learning or the occupational path a worker pursues. A career is made up of many tasks, jobs, steps, and levels of work extending over a lifetime. In other words, a career is the sum of all the jobs filling a lifetime.

If we are concerned with career satisfaction or satisfactions from a career, the numerous parts or jobs must each yield a certain amount of mutual satisfaction.

Dignity and Worth of Work

In American culture the most important single thing that determines a man's worth to society is his life work. His self concept is often shaped by the level of his occupation and the quality of his performance in it![13] Satisfactory employment is an important source of economic well-being and feelings of self-worth. Perhaps nothing adds more to a man's sense of competence and to the meaning of his life than work that he does well and feels has value. Erich Fromm stated:

> There is no meaning to life except the meaning man gives his life by unfolding of his powers, by living productively.[14]

In fact, there is an old saying that "to destroy a man, it is only necessary to make his work seem inept and useless."

The individual spends many of his waking hours on a job, the product of which is his contribution to the world and immortality. We can appreciate, then, why work must have dignity and worth. His personal relationships with supervisors and other employees are also of vital importance to his occupational satisfaction or dissatisfaction. If he feels inadequate or cannot take pride in his work or is in constant conflict with others, his work becomes a problem instead of a source of strength and pride for him. Yet, it is conservatively estimated that over one-third of all employees have jobs in which they are dissatisfied.[15]

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13 Robert J. Havighurst, *Human Development and Education.* New York: David McKay Co., Inc., 1953.

14 Erich Fromm, *Man for Himself.* Greenwich, Connecticut: Fawcett Publications, Inc., 1967. p. 53.

15 James Coleman, *Abnormal Psychology and Modern Life.* Palo Alto: Scott, Foresman and Company. Third Edition. p. 159.

When we examine what provides dignity and worth in a job, we find that the quality of performance is considered valuable to the employer and has elements of intrinsic value to the employee. It is the quality of performance then that determines the basis for dignity, not necessarily the title or level of the job. Every job has the potential to be performed with excellence and consequently with dignity to the worker.

A job has worth in terms of society's need for its product. The greater intensity of need or demand usually determines the price or worth in the sense of pay. Such factors as difficulty, need for specialized skills, educational investment and risk contribute to the worth of a job. If a job is needed and the emphasis is on excellence of performance, there is potential dignity and worth in all work.

Taxonomy of Work

There are various levels of performance, skill, knowledge, and competence in the range of jobs to be done in society. Degrees of education, skill development, and experience usually combine to differentiate between job levels. Chart III, "Taxonomy of Work," attempts to identify common characteristics of work as they relate to the various levels of performance or need for skills and knowledge. The classification ranges I through VI in terms of demands for skill. Level I is the simplest and most basic level which would be primarily prescriptive, and level VI the most complex which relates to the highly creative or discretionary. Level I, the basic or most simple, would be the expenditure of human energy, either physical or mental, with very little call for skill or value judgment. As indicated, this is usually classified as labor. Level II would be the use of energy to operate a machine. Physical or mental energy is expressed through skills, and a machine is used to increase output. The function would be primarily that of an operator. Level III deals with supervising a function which concerns such actions as instructing, explaining or utilizing. Level IV is managerial and concerns the application of ideas or recommending. Level V is primarily professional where the function is a matter of implementing, organizing or designing; this requires a high degree of developed skill or knowledge. Level VI concerns creativity and has no upper limits. Creativity includes working up to a level of excellence or precision on new ideas, purposes or policy.

At each level there is latitude for excellence of performance and, consequently, dignity. There are the prescriptive and discretionary dimensions and learning and product content in each job at each level. At the lower level there is more potential for skill, knowledge, and routine development, but each job has some discretionary action in matters of decision, judgment, and value, particularly at the job entry time.

Volume Two of the *Dictionary of Occupational Titles,* Appendix A, suggests that work functions with things, data, and people, and this taxonomy classifies work content as related by levels to things, data and people. A taxonomy such as this is helpful in analyzing the nature of jobs and determining the required prerequisite component skills and knowledges needed for satisfactory employment. It is an educational guide to assist an employee aspiring to prepare for and perform at certain job levels.

Chart III

TAXONOMY OF WORK

LEVELS	JOB CHARACTERISTICS	FUNCTIONAL DOMAIN	FUNCTION		
			THINGS*	DATA*	PEOPLE*
VI	CREATIVITY	NEW IDEAS PURPOSES- POLICY	Designing	Evaluation	Idealization
V	PROFESSIONAL	IMPLEMENTING ORGANIZING- DESIGNING	Testing	Synthesizing	Mentoring
IV	MANAGERIAL	APPLYING IDEAS RECOMMENDING	Precision	Coordinating Analyzing	Negotiating Instructing
III	SERVICE SUPERVISORY	INSTRUCTING EXPLAINING UTILIZING	Installation Service Supervising Operator	Compile Compute	Supervising Diverting Persuading
II	MECHANICAL (energy + machine) PHYSICAL MENTAL	OPERATORS OF _____	Manipulating Driving Tending	Copy Transcribe	Explaining Directing Signaling
I	ENERGY Physical Mental	LABOR	Feeding Handling	Collect Counting Observing	Serving

* ALL WORK FUNCTIONS IN RELATIONSHIP TO THINGS, DATA, AND/OR PEOPLE

Dictionary of Occupational Titles, Appendix, Volume 2, 1965.

Three Basic Occupational Problems

There are three basic problems to be confronted in occupational education: unemployment, underemployment and overemployment.

(1) Unemployment generally results from a lack of proper attitudes or saleable job entry skills.

(2) Underemployment is found when an employee is unable to continue to be promoted and is forced to remain at a job level below his personal aspirations, when he feels he is "bumping his head." Overt symptoms of low job satisfaction and boredom from routine occur when the opportunity to learn or be promoted becomes minimal.

(3) Overemployment results from an education deficit, that is, the demands of the job are greater than the education or experience of the employee. He feels in "over his head" and becomes frustrated, threatened, defensive, irritable and generally in trouble on the job. His anxiety and conflict are often manifested by physical and emotional problems. A conservative estimate indicates that 50 percent of general hospital beds are filled with psychosomatic disorders arising from job problems of this kind, examples of which follow.

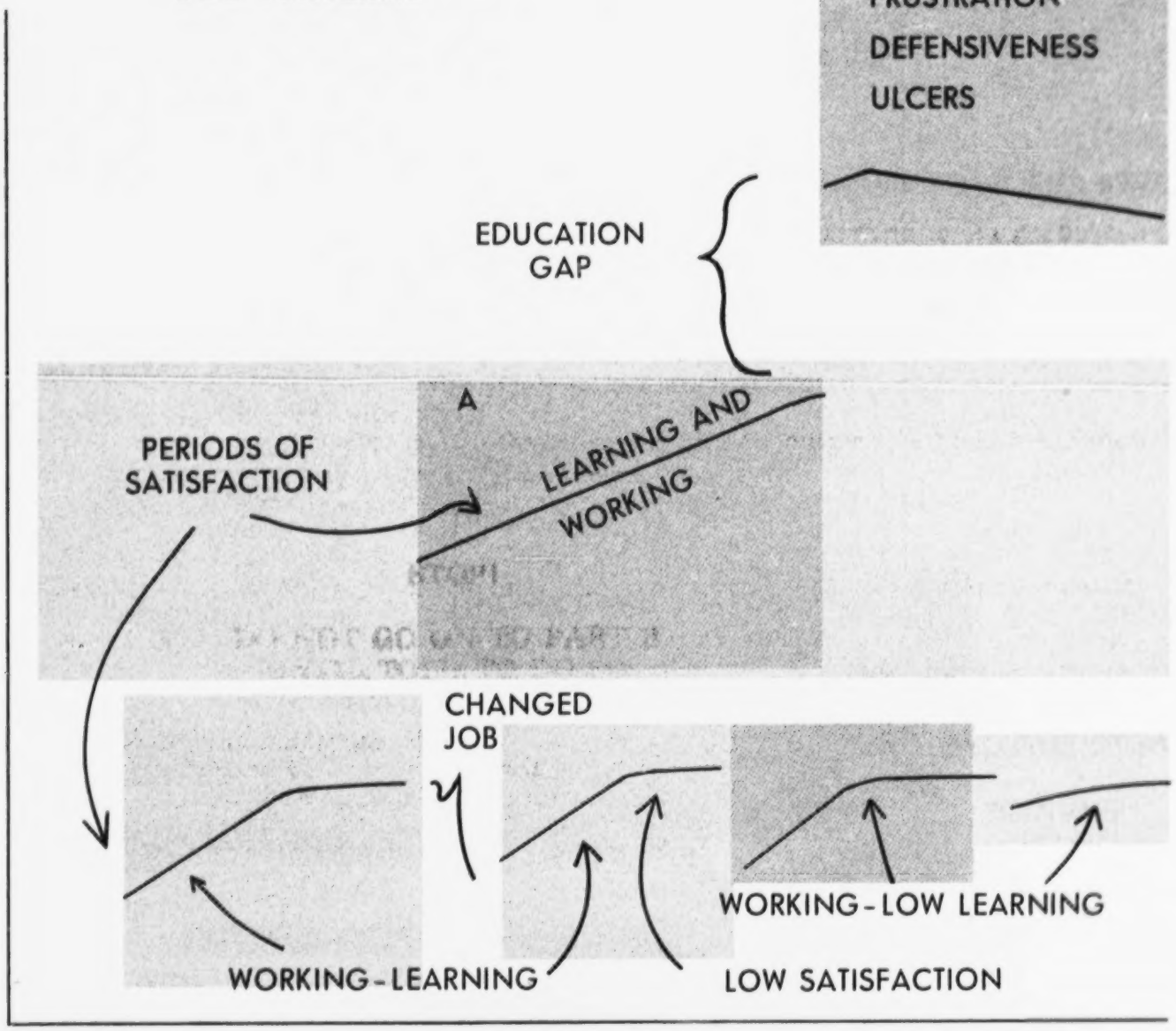
Career Patterns Without Related Training

Illustration I, Job Patterns, illustrates career development with examples of the occupational problems. Each of the four rectangles in the lower one-third of the chart indicates separate jobs held successfully for a time by an employee. The diagonal in each represents the learning rate, thus dividing the job rectangles into the two dimensions, discretionary and prescriptive. The first rectangle indicates that the worker took a job and, after a period of time, the learning diagonal leveled off causing boredom on the job. When the learning potential levels off, the employee tends to become irritated and militant, and he expresses these and other symptoms of low job satisfaction. This is a typical underemployment job situation. Many workers with higher job aspirations will start a new job, learn, produce for a time, then "bump their heads," and start over. Often they will start over at a lower level with little transfer of learning from the previous job experience. Career patterns that consist of a frequent changing of jobs, immediate learning gain, eventual boredom, and quitting with periods of unemployment between jobs are typical for many workers. The sum of their job experiences constitute a career. All jobs should be planned to combat these identifiable symptoms of low job satisfaction. It should be noted that these workers with saleable skills are unemployed for periods of time between changing jobs. They are statistically unemployed.

Typical factors limiting an employee of this type are union membership or seniority, lack of certain educational requirements, certification, or special kinds of skill and knowledge that cannot always be acquired on the job with the typical employer or through the existing school systems.

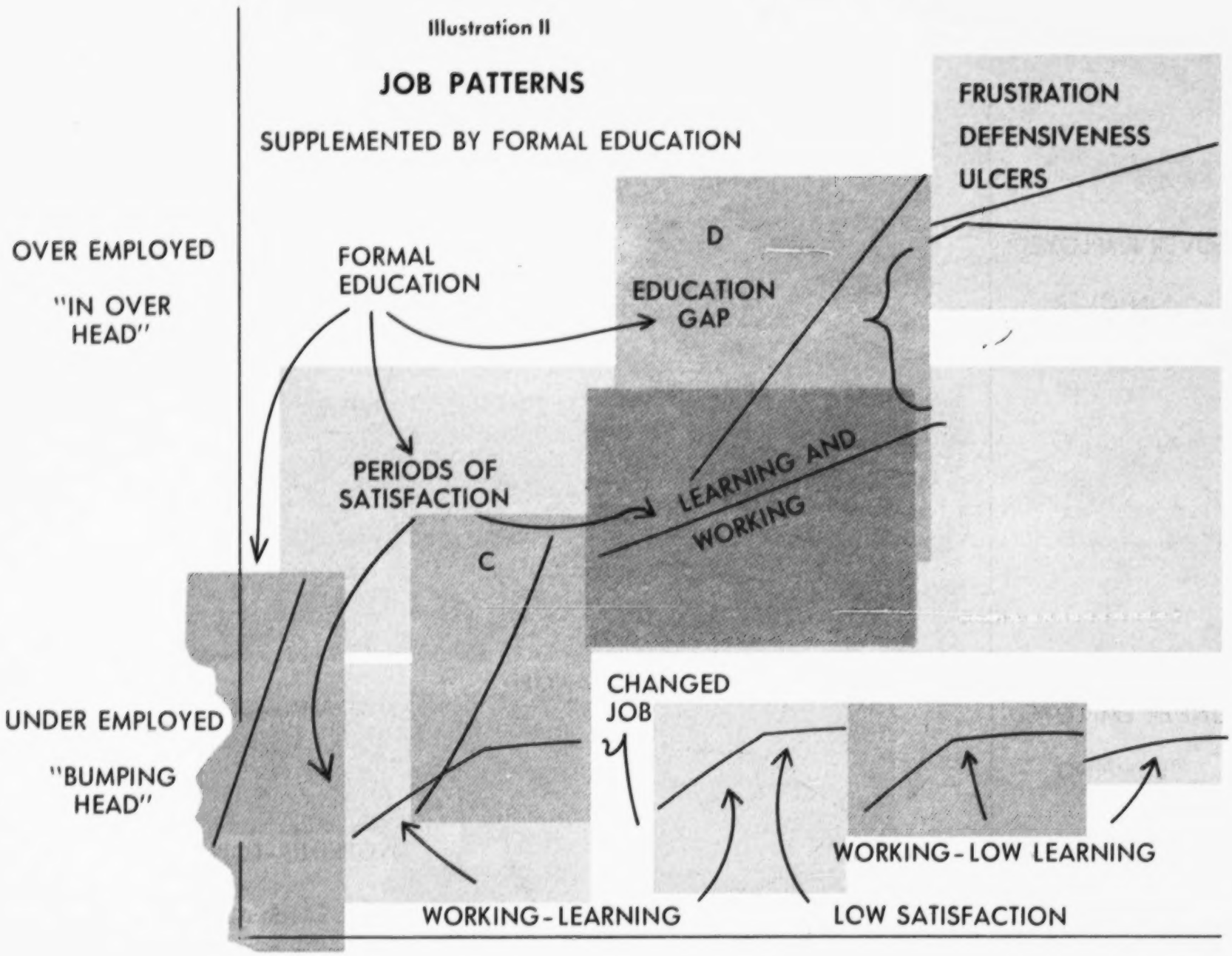
Illustration I

JOB PATTERNS



The second situation illustrated in the center and upper band of the diagram indicated by the work-learn rectangle (A) illustrates a situation where the employee is making considerable progress with high satisfaction. At a certain point the employer pressed with a need to fill a job demanding a much higher level of competence promotes an employee up "over his head" (rectangle B) to a job which had demands beyond the functional level of readiness and competence. The employee may have the potential and the ability, but he lacks the experience, seasoning, or perhaps certain educational skills or knowledges. This lack of confidence or readiness along with the pressures and responsibility of the job itself create frustration, defensiveness, and even possible physical or mental breakdown. Depending upon the nature of the employer and the requirements for certain production or output, it is entirely possible that this type of person would soon be transferred from one job to another or even discharged. This type of situation many times results in employees with much talent falling among the statistics of unemployed for periods of time.

Illustration II



Career Patterns With Related Training

Illustration II indicates the same situation as Illustration I, with one exception. The two shaded vertical rectangles C-D superimposed over the work rectangles indicated that periods of formal education have been introduced at strategic times in the worker's career. This demonstrates a solution to the two problems, underemployment and overemployment. The first rectangle (C) representing formal education has been introduced over the first job situation. This suggests that at a certain point the employee supplements his work-learning on the job with some type of relevant vocational or professional instruction. This allows him to raise his educational level sufficiently so that he can proceed through the "head bumping" situation and take another job at the next higher level and proceed on a learning-working schedule with satisfaction.

Shaded rectangle (D) representing a formal school program, self-initiated or on the job, can make it possible for the worker to supplement his work with school. With this additional relevant skill and knowledge he can proceed to the higher work levels. He is now able to cope with the demands of the job satisfactorily and continue on a work-learning schedule which is mutually satisfactory to both the employee and the employer. This pattern might be duplicated several times in a career as the worker is promoted from one job to the next until retirement. How far he proceeds up the job ladder depends entirely upon the learning rate of the individual and the ability of the employee and the employer to cooperate to help build a mutually satisfying career.

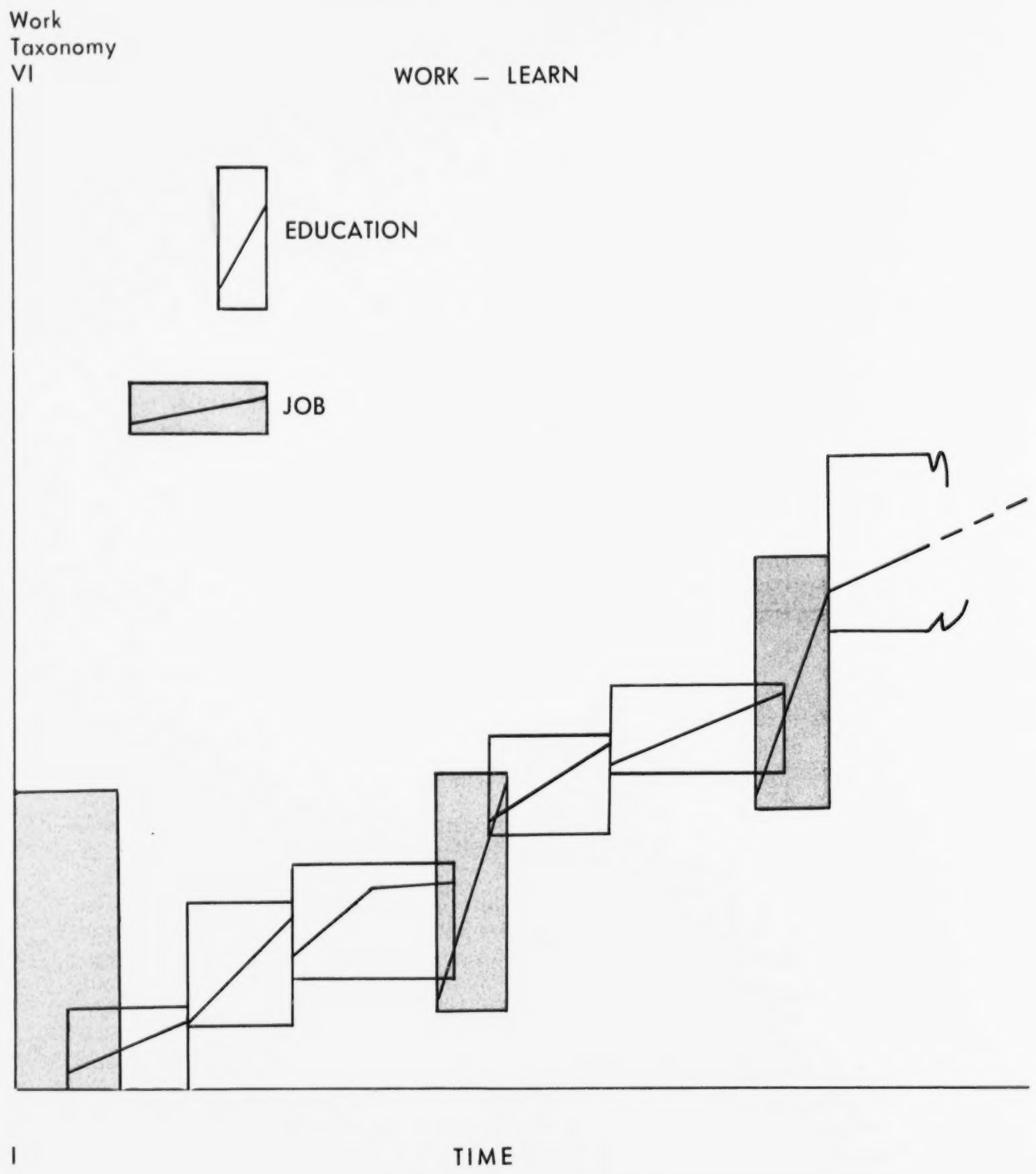
A Satisfactory Career Pattern

Illustration III suggests a typical career plan to be implemented through job changes supplemented by occupational education to assist a person in the building of a career. Again we must emphasize that the justification of formal education is a process whereby we gain relevant knowledge, skills, and experience at an efficient rate. We can help plan a career by interspersing at appropriate times blocks of education to supplement the working learning components. By the use of the rectangles symbolizing a job or educational experience we are illustrating how jobs fit together to build a satisfactory career. The first educational block (A) is intended to support present contentions and suggest that much of existing formal education, particularly at the elementary, secondary and college level, is highly irrelevant in terms of employment requirements. In spite of this, people do get jobs and move from one job to the next, either progressing laterally or diagonally upward in different kinds of career patterns.

At the time this worker was in his third job it is clear that the challenge or learning line was leveled off, and low satisfaction was resulting. He could have chosen to work on a masters or advanced college degree or go to a trade or vocational school. At the end of this period of school he accepted another job and progressed again at a reasonable rate. He changed jobs again and continued to progress to a point when it is obvious to him or the employer that supplementary education was again necessary if he was to continue to progress. This points out that it is often necessary for the employee to back up and learn some basic skills not necessarily related to the job at the time but necessary for the person if he is to move to the next level and continue working and learning. Had this educational opportunity not been available or had the employee not taken advantage of it, it is entirely possible that the individual would have leveled off into a period of low satisfaction, and his only alternative would have been to change jobs at the same or lower level to again achieve a satisfactory learning working situation.

The general upward progress of the series of job and learning experiences could very well illustrate a satisfactory career for the individual. This suggests that, if occupational education is to fulfill its mission realistically, educational opportunity must be provided people throughout life. In short, it must be provided *at all levels, for all people, of all ages.* Furthermore, occupational education is a joint venture or should be a joint responsibility between the formal education agencies of society and the employers or business and industry of an area.

Illustration III **CAREER PATTERN**



To summarize, it appears that a realistic approach to occupational education includes at least three components:

The first is to begin working with youth with respect to building a favorable image and attitude toward the world (of work).

The second is a more realistic approach to career planning or providing educational experiences which would be highly relevant to the world of work and job requirements and, especially, to provide those relevant educational opportunities for people of all ages and throughout the entire career life pattern.

The third concerns the establishment in each community, preferably as a part of the ongoing educational system, a coordinating job placement service providing for planned and efficient job entry for young people and opportunity for upgrading throughout life, a placement service bridging the gap between the educational system and the world of work. After initial placement the school system must continue to provide services whereby the employee can efficiently re-enter and efficiently re-educate himself for upward mobility in a successful career building pattern.

The Goals of Occupational Education

From this exploration of work, employability, and career planning we have made a case for an educational program which stresses the importance of attitudes as well as job entry skills. Before a realistic program of occupational education can be planned it is necessary to define it in terms of goals or objectives. As a general goal, programs in occupational education should help to build "a society in which all people can function with optimum mutual satisfaction." It is important to emphasize that mutual satisfaction should exist between employee, employer, and the society of which they are a part. In this sense mutual satisfaction can be defined as a condition where an employee can function at his greatest potential, where the employer is satisfied with the business enterprise output, and both contribute to higher levels of social satisfaction.

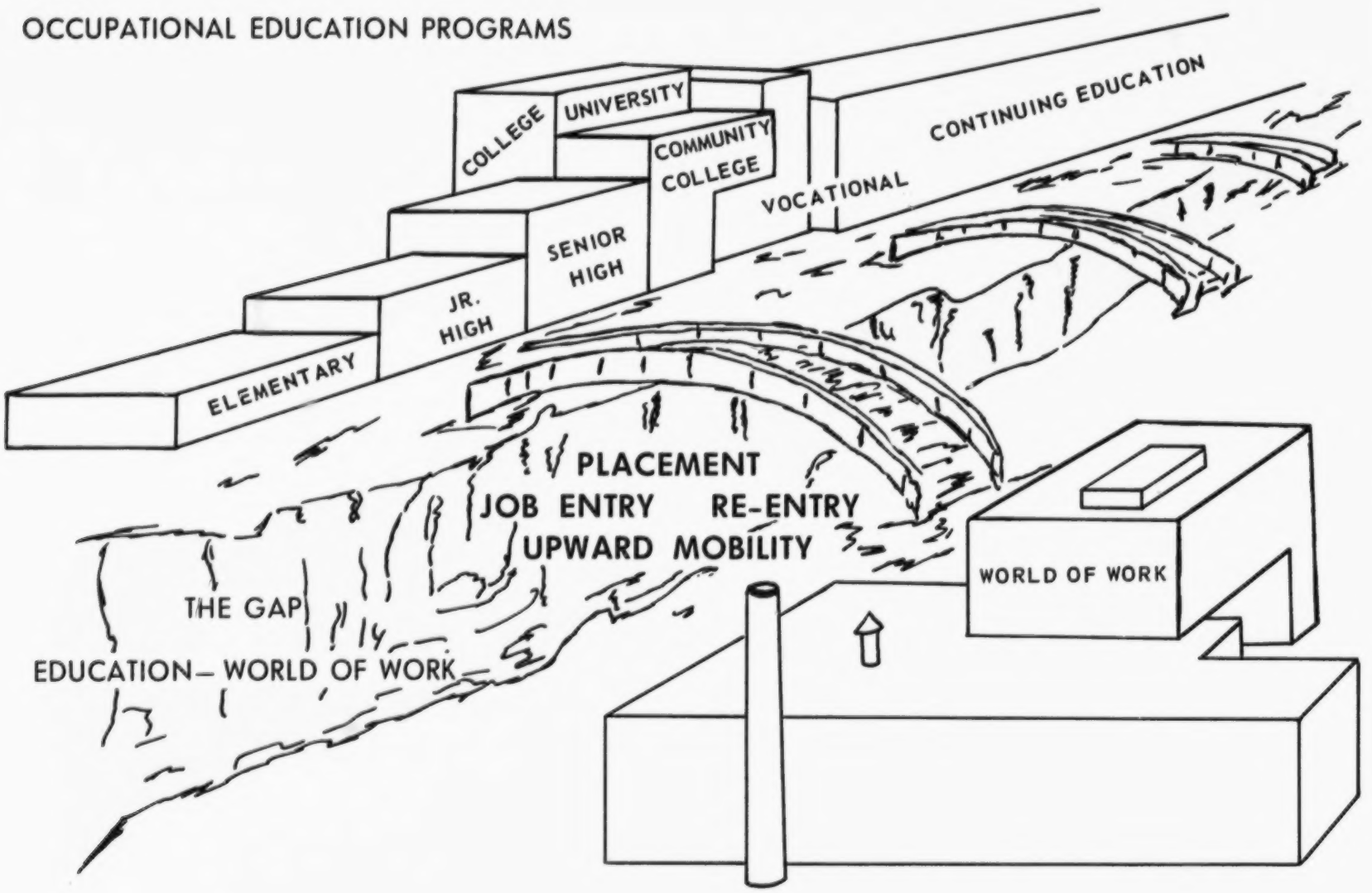
As an approach to developing a program to reach this occupational goal it seems logical and desirable to organize in three phases:

(1) The Image of the World of Work

(2) Curriculum planning around concepts of occupational cluster or kindred careers

(3) Job entry—re-entry for upward mobility.

Illustration IV



Objectives of the Rocky Mountain Educational Laboratory, Inc., in the Area of Occupational Education

The first commitment is to explore and develop an educational program to promote desirable attitudes toward a realistic image of the world of work. During the developmental period, the "image" program will be initiated in seventh grade social studies and language arts classes of selected volunteering junior high schools in the Laboratory's region. In future years plans are to expand the program to both preceding and succeeding grades.

The second phase of the program, concerning curriculum development built around job clusters and kindred careers, will relate educational objectives more realistically to job requirements and over-all career planning.

The first priority in the development of curriculum cluster, primarily because of the present great national need, will stress the health occupations, hopefully to develop a curriculum to improve the manpower supply in health occupations. The occupational patterns developed in this area will then be related to the other occupations and educational needs. This project will cut across the existing formal educational structure with considerable emphasis on the post-high school, community college, adult, and continuing education programs in each community.

The third area, and probably the most significant in terms of evident results, will deal with the problems of job entry or bridging the gap between education and the world of work. This is conceived as an extension of the kind of service and assistance the school systems now provide to only those students who go on to college. It seems highly discriminatory to provide at public expense assistance for students entering college and to ignore that large number of students needing assistance to move into satisfactory initial jobs and proceed to a career building situation.

In this third phase there is considerable research that needs to be done to identify those specialized skills and knowledges that are required in specific jobs, not only for job entry but for progress into the many changing old and new positions developing in business and industry today and in the future.

The responsibility for occupational education does not rest solely with either business, industry, labor, or educational systems, but must be resolved cooperatively. In all probability this will require some kind of coordinating agency within each community, first to assess the needs of labor, business and industry, and then to organize to provide assistance to employers and employees to upgrade workers on the job with supplementary education. This will require close cooperation with existing educational agencies and considerable expansion of relevant continuing educational opportunities to employees and employers. Competent help should be available for jobs when and where there is a need. It is of mutual concern that employers and employees have alternative opportunities to staff and or to build a satisfactory career pattern.

Business and industry must recognize that each job or position yields some education or opportunity for mental-physical growth, otherwise business and industry can continue to expect low satisfaction and a high turnover of employees.

The RMEL has undertaken the vast project of attacking occupational problems on a non-fragmented, total basis. The project is as rewarding as it is challenging, for in it lies the solutions to these problems through the creation of a society in which all people can function with optimum mutual satisfaction.